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10/521,832

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EXAMINER

KERZHNER, ALEKSANDR

ART UNIT

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2169

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/521,832

Applicant(s)

HEUER ET AL.

Examiner

Aleksandr Kerzhner

Art Unit

2169

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
(Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date Jan 2005, Apr 2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to the original application filed on 04/05/2005.
This action is Non-Final. Claims 15-28 are pending and have been examined.

Priority

2. As required by M.P.E.P. 201.14(c), acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Claim for priority is acknowledged to be based on applications filed on 07/15/2002 (Germany 102 31 971.5) and 10/18/2002 (Germany 102 48 758.8).

Oath/Declaration

3. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. 1.63.

Information Disclosure Statement

As required by M.P.E.P. 609(C), the applicant's submissions of the Information Disclosure Statements dated 01/02/2005 and 04/05/2005 are acknowledged by the examiner and some of the cited references have been considered in the examination of the claims now pending. As required by M.P.E.P. 609 C(2), a copy of the PTOL-1449 initialed and dated by the examiner is attached to the instant office action.

4. However, the information disclosure statement filed 05/09/2007 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the

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relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

5. The drawings are objected to because:

Figures 2 and 3 contain no reference characters. It appears in the specification (page 7, 9) that applicant intends to refer to parts of the figure (e.g., "A," "AA," "name," "base," and etc.) however it is not clear to which parts applicant is attempting to refer. Examiner suggests amending the drawings and the specification to include reference characters with lead lines.

Figure 4 includes separate and unconnected elements being not enclosed in a rectangle for showing the elements belonging to a same figure. Some of the text appears to be incorrectly used as reference characters ("States of the byte code") having a lead line, while some phrases ("Reading of schema information," "Pointers to subsequent states," "Decoded path/payload," "Decoded schema byte code" and "or") appear to be floating in the drawing unconnected to any parts. Further two lists appear to have arrows going to module BCI, it is not clear if only the last part of the list should be pointed into the module or the whole lists, and if those lists are meant to represent components of the schematic, or a description for a component.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. (Please see e.g., page 5.) Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Abstract

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

7. In the instant case abstract recites "according to the present invention" which can be implied. Appropriate correction is required.

Claim Objections

8. **Claims 15-28** are objected to because of the following informalities:

Regarding **claims 15-28**, claims contain acronym "XML," however no definition is given. Using just an acronym without its definition creates ambiguity in the claim language. For the purposes of this examination examiner will treat XML as referring to Extensible Markup Language (XML).

Also regarding **claims 19 and 24**, claims contain acronym "SBC," however no definition is given. Using just an acronym without its definition creates ambiguity in the claim language. For the purposes of this examination examiner will treat SBC as referring to schema branch code (SBC).

Appropriate correction is required.

9. **Claims 15, 20, 25 and 27** are objected to because of the following informalities:

Regarding **claims 15, 20, 25 and 27**, it is not clear what "the normalized XML schema," "the encoded XML schema" and "the encoded XML document" is meant to refer to. Steps of "normalizing an XML schema," "encoding the normalized XML schema," and "encoding the XML document" are noted, however, it is not clear that such normalizing and/or encoding produces "a normalized XML schema," "an encoded XML schema," and/or "an encoded XML document." A schema/document can be normalized/encoded in memory and not stored as "a normalized XML schema," "an encoded XML schema," and/or "an encoded XML document."

Appropriate correction is required.

10. **Claims 26 and 28** are objected to because of the following informalities:

Regarding **claims 26**, "the encoder unit displays a configurable byte code interpreter" is claimed. However, while functions of "configurable byte code interpreter" are further described, it is not clear how an encoder unit can display what appears to be a software procedure. It is not clear from the claim language on what the encoder unit actually displays.

Regarding **claims 28**, "the decoder unit displays a configurable byte code interpreter" is claimed. However, while functions of "configurable byte code interpreter" are further described, it is not clear how a decoder unit can display what appears to be

a software procedure. It is not clear from the claim language on what the decoder unit actually displays.

Appropriate correction is required.

11. **Claim 27** is objected to because of the following informalities:

On line 3 of the claim, applicant claims "an encoder unit which comprises:" followed by a series of steps a–e. An encoder unit cannot comprise only method steps, as they are not structural components.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. **Claims 15, 20, 25 and 27** are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966). (See e.g., "using a metaschema," "using the associated XML schema" and "using the normalized XML schema")

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. **Claims 15, 20, 25 and 27** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 15, 20, 25 and 27 provide for the use of "metaschema" and "associated XML schema", but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Also regarding **claims 15, 20, 25 and 27**, phrase "the associated XML schema" renders claim indefinite as it is not clear if it refers to "an XML schema associated with the XML document," "the normalized XML schema" or "encoded XML schema."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. **Claims 15, 19-20, 24-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Seyrat et al., FR 2 813 743 (Hereinafter "Seyrat et al.") in view of

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Seyrat et al., "Text of ISO/EIC FCD 15938-1 Information Technology - Multimedia Content Description Interface - Part 1 Systems" (Hereinafter "ISO").

Regarding **claim 15**, Seyrat et al. shows:

A method for encoding and transmitting an XML document, the method comprising:

a) normalizing an XML schema associated with the XML document (*normalizing XML schema, see e.g., page 3, lines 6-8, Fig 1*)

b) encoding the normalized XML schema using a metaschema; (*compiling the normalized structure schema using metaschema, see e.g., page 3, lines 10-13*)

c) transmitting the encoded XML schema in a first bit stream; (*transmitting an encoded XML schema, see e.g., page 4, lines 25-28*)

d) encoding the XML document using the associated XML schema; (*compressing the structured document using schema, see e.g., page 3, lines 15-19*) and

e) transmitting the encoded XML document in a second bit stream, wherein the first and second bit streams are provided for reception for a decoder. (*transmitting the encoded XML document, possible to transmit without schema, see e.g., page 3, line 34 – page 4, line 3*)

Seyrat et al. does not expressly disclose the normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group,

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with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping;

simplifying a choice group containing an element with an attribute value minOccurs = 0, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group;

However, ISO teaches:

The normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping; (See e.g., page 37, *Syntax Tree Transformation - Group simplification rule*, which clearly shows and describes identical procedure as claimed)

simplifying a choice group containing an element with an attribute value minOccurs = 0, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; See e.g., page 37, *Syntax Tree*

Transformation – Empty choice simplification, which clearly shows and describes identical procedure as claimed) and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values $\text{minOccurs} = \text{maxOccurs} = 1$, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group; (See e.g., page 37-38, *Syntax Tree Transformation – Choice Simplification rule, which clearly shows and describes identical procedure as claimed*)

Seyrat et al. teaches a general way of leveling the tree of schema in order to reduce and simplify it. ISO teaches a non-destructive way to normalize XML schema in order to improve compactness. Thus, it would have been obvious to one of ordinary skill in the art to apply the normalization technique as taught by ISO, to improve the normalization method of Seyrat et al. for the predictable result of achieving a more compact schema that in turn is quicker to transmit.

Regarding **claim 19**, Seyrat et al. in view of ISO shows:

Information for at least one of an inheritance tree of types, global elements and substitution groups is encoded, and wherein at least one of (i) each type is described by both an item of information about a respective type code with reference to a master type and a length of all type codes which refer to the type described, (ii) each global element is described by both a length of a respective SBC and the respective SBC, and (iii) each element in a substitution group is described by both a length of a respective substitution code and the respective substitution code. (Seyrat et al.: encoding element with length, see e.g., page 15, line 33 – page 16, line 1; ISO: *encoding using Schema Branch*

Codes, see e.g., page 23: 7.3.1.2 Navigation Path, page 26, 7.3.1.4 Extension and forward/backward compatibility of navigation paths, encoding length information; see e.g., page 28, Rule 4)

Regarding **claim 20**, Seyrat et al. shows:

A method for encoding, transmitting and decoding an XML document, the method comprising:

a) normalizing an XML schema associated with the XML document (*normalizing XML schema, see e.g., page 3, lines 6-8, Fig 1*)

b) encoding the normalized XML schema using a metaschema; (*compiling the normalized structure schema using metaschema, see e.g., page 3, lines 10-13*)

c) transmitting the encoded XML schema in a first bit stream; (*transmitting an encoded XML schema, see e.g., page 4, lines 25-28*)

d) encoding the XML document using the associated XML schema; (*compressing the structured document using schema, see e.g., page 3, lines 15-19*) and

e) transmitting the encoded XML document in a second bit stream, wherein the first and second bit streams are provided for reception for a decoder; (*transmitting the encoded XML document, possible to transmit without schema, see e.g., page 3, line 34 – page 4, line 3*)

f) decoding the encoded XML schema transmitted in the first bit stream into the normalized XML schema by using the metaschema, wherein the normalized schema and the metaschema correspond to the schemas used in the encoding; (*decoding the*

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encoded XML schéma using techniques and metaschema corresponding to the once used during encoding, see e.g., page 4, lines 15-28) and

g) decoding the encoded XML document transmitted in the second bit stream by using the normalized XML schema, without performing a further normalization of the normalized XML schema. (*decoding the encoded XML document using schema, see e.g., page 18, lines 33-41*)

Seyrat et al. does not expressly disclose the normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping;

simplifying a choice group containing an element with an attribute value minOccurs = 0, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group;

However, ISO teaches:

The normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping; (See e.g., page 37, *Syntax Tree Transformation - Group simplification rule*, which clearly shows and describes identical procedure as claimed)

simplifying a choice group containing an element with an attribute value. minOccurs = 0, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; See e.g., page 37, *Syntax Tree Transformation – Empty choice simplification*, which clearly shows and describes identical procedure as claimed) and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group; (See e.g., page 37-38, *Syntax Tree Transformation – Choice Simplification rule*, which clearly shows and describes identical procedure as claimed)

Seyrat et al. teaches a general way of leveling the tree of schema in order to reduce and simplify it. ISO teaches a non-destructive way to normalize XML schema in order to improve compactness. Thus, it would have been obvious to one of ordinary skill in the art to apply the normalization technique as taught by ISO, to improve the

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normalization method of Seyrat et al. for the predicable result of achieving a more compact schema that in turn is quicker to transmit.

Regarding **claim 24**, Seyrat et al. in view of ISO shows:

Information for at least one of an inheritance tree of types, global elements and substitution groups is first decoded, and wherein at least one of (i) each type is described by both an item of information about a respective type code with reference to a master type and a length of all type codes which refer to the type described, (ii) each global element is described by both a length of a respective SBC and the respective SBC, and (iii) each element in a substitution group is described by both a length of a respective substitution code and the respective substitution code. (Seyrat et al.: decoding encoded element with length, see e.g., page 15, line 33 – page 16, line 1; *ISO: use of Schema Branch Codes*, see e.g., page 23: 7.3.1.2 Navigation Path, page 26, 7.3.1.4 Extension and forward/backward compatibility of navigation paths, coding of length information, see e.g., page 28, Rule 4)

Regarding **claim 25**, Seyrat et al. shows:

A device for encoding XML documents, comprising an encoder unit for effecting a method which includes the steps of:

a) normalizing an XML schema associated with the XML document (*normalizing XML schema*, see e.g., page 3, lines 6-8, Fig 1)

b) encoding the normalized XML schema using a metaschema, (*compiling the normalized structure schema using metaschema*, see e.g., page 3, lines 10-13)

wherein the encoded XML schema is to be transmitted in a first bit stream; (*transmitting an encoded XML schema, see e.g., page 4, lines 25-28*) and

c) encoding the XML document using the associated XML schema, (*compressing the structured document using schema, see e.g., page 3, lines 15-19*) wherein the encoded XML document is to be transmitted in a second bit stream, with the first and second bit streams being provided for reception for a decoder (*transmitting the encoded XML document, possible to transmit without schema, see e.g., page 3, line 34 – page 4, line 3*)

Seyrat et al. does not expressly disclose the normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping;

simplifying a choice group containing an element with an attribute value minOccurs = 0, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group;

However, ISO teaches:

The normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping; (See e.g., page 37, *Syntax Tree Transformation - Group simplification rule*, which clearly shows and describes identical procedure as claimed)

simplifying a choice group containing an element with an attribute value. minOccurs = 0, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; See e.g., page 37, *Syntax Tree Transformation – Empty choice simplification*, which clearly shows and describes identical procedure as claimed) and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group; (See e.g., page 37-38, *Syntax Tree Transformation – Choice Simplification rule*, which clearly shows and describes identical procedure as claimed)

Seyrat et al. teaches a general way of leveling the tree of schema in order to reduce and simplify it. ISO teaches a non-destructive way to normalize XML schema in order to improve compactness. Thus, it would have been obvious to one of ordinary

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skill in the art to apply the normalization technique as taught by ISO, to improve the normalization method of Seyrat et al. for the predicable result of achieving a more compact schema that in turn is quicker to transmit.

Regarding **claim 26**, as well as understood, Seyrat et al. in view of ISO shows:

The encoder unit displays a configurable byte code interpreter which interprets information in a byte code and which, depending on a configuration, produces a code from the structured document based on a byte code which represents one of a path and a payload. (Seyrat: See page 11, lines 1-9, where MPEG-7 content may be delivered independently or together with the content they describe; page 47: 8.4.6.12

Consumption, where user is presented with content)

Regarding **claim 27**, Seyrat et al. shows:

A system for encoding and decoding XML documents comprising: an encoder unit (*Fig 1#16*) which comprises:

a) normalizing an XML schema associated with the XML document (*normalizing XML schema, see e.g., page 3, lines 6-8, Fig 1*)

b) encoding the normalized XML schema using a metaschema, (*compiling the normalized structure schema using metaschema, see e.g., page 3, lines 10-13*) wherein the encoded XML schema is to be transmitted in a first bit stream; (*transmitting an encoded XML schema, see e.g., page 4, lines 25-28*) and

c) encoding the XML document using the associated XML schema, (*compressing the structured document using schema, see e.g., page 3, lines 15-19*) wherein the encoded XML document is to be transmitted in a second bit stream, with the first and

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second bit streams being provided for reception for a decoder (*transmitting the encoded XML document, possible to transmit without schema, see e.g., page 3, line 34 – page 4, line 3*).

and a decoder unit (*Fig 1#16'*) for effecting a method which comprises:

f) decoding the encoded XML schema transmitted in the first bit stream into the normalized XML schema by using the metaschema, wherein the normalized schema and the metaschema correspond to the schemas used in the encoding; (*decoding the encoded XML schema using techniques and metaschema corresponding to the once used during encoding, see e.g., page 4, lines 15-28*) and

g) decoding the encoded XML document transmitted in the second bit stream by using the normalized XML schema, without performing a further normalization of the normalized XML schema. (*decoding the encoded XML document using schema, see e.g., page 18, lines 33-41*)

Seyrat et al. does not expressly disclose the normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping;

simplifying a choice group containing an element with an attribute value minOccurs = 0, the attribute minOccurs of the choice group being set to 0 irrespective

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of a previous value, with the element having the attribute value $\text{minOccurs} = 0$ being assigned an attribute value $\text{minOccurs} = 1$; and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values $\text{minOccurs} = \text{maxOccurs} = 1$, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group;

However, ISO teaches:

The normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping; (See e.g., page 37, *Syntax Tree Transformation - Group simplification rule*, which clearly shows and describes identical procedure as claimed)

simplifying a choice group containing an element with an attribute value $\text{minOccurs} = 0$, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value $\text{minOccurs} = 0$ being assigned an attribute value $\text{minOccurs} = 1$; See e.g., page 37, *Syntax Tree Transformation – Empty choice simplification*, which clearly shows and describes identical procedure as claimed) and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values $\text{minOccurs} = \text{maxOccurs} = 1$, the further choice

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group is dissolved and contents of the further choice group are incorporated directly into the choice group; (See e.g., page 37-38, *Syntax Tree Transformation – Choice Simplification rule, which clearly shows and describes identical procedure as claimed*)

Seyrat et al. teaches a general way of leveling the tree of schema in order to reduce and simplify it. ISO teaches a non-destructive way to normalize XML schema in order to improve compactness. Thus, it would have been obvious to one of ordinary skill in the art to apply the normalization technique as taught by ISO, to improve the normalization method of Seyrat et al. for the predictable result of achieving a more compact schema that in turn is quicker to transmit.

Regarding **claim 28**, as well as understood, Seyrat et al. in view of ISO shows:

The decoder unit displays a configurable byte code interpreter which is configurable via information from the byte stream and which, depending on a configuration, produces at least one of a path, a payload and a byte code from the byte stream based on a byte code. (Seyrat: See page 11, lines 1-9, where MPEG-7 content may be delivered independently or together with the content they describe; page 47: 8.4.6.12 Consumption, where user is presented with content)

15. **Claims 16 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Seyrat et al. in view of ISO as applied to claims 15 and 20 above, and further in view of C. M. Sperberg-McQueen, "Canonical XML forms for post-schema-validation infosets: A preliminary reconnaissance" (Herein after "Sperberg-McQueen").

Regarding **claims 16 and 21**, Seyrat et al. in view of ISO teaches all the claimed limitations as put forth in the rejections of claims 15 and 20 above, except it does not expressly disclose:

Restructuring at least one of element declarations and attributes declarations of a schema definition of a structured document such that anonymous type definitions are taken out of the respective at least one of element declarations and attribute declarations and are given at least one of a name and a code which is used for referencing purposes for the corresponding element. (Claim 15)

Restructuring at least one of element declarations and attribute declarations of a structured document such that anonymous types, to each of which at least one of a name and a code has been assigned for purposes of transmission, are inserted in the respective at least one of element declarations and attribute declarations by which the respective anonymous type is referenced. (Claim 16)

However, Sperberg-McQueen teaches:

Restructuring at least one of element declarations and attributes declarations of a schema definition of a structured document such that anonymous type definitions are taken out of the respective at least one of element declarations and attribute declarations and are given at least one of a name and a code which is used for referencing purposes for the corresponding element. (*A technique for restructuring XML, naming an anonymous type, taking elements out of declaration and naming them with code names such as "_ct_anon01," see e.g., Page 4, 2.2 Names of types, lines 5-31, Page 8: 3.1 Dump format based on existing transfer syntax – page 9, line 27*)

Restructuring at least one of element declarations and attribute declarations of a structured document such that anonymous types, to each of which at least one of a name and a code has been assigned for purposes of transmission, are inserted in the respective at least one of element declarations and attribute declarations by which the respective anonymous type is referenced. (*An easily reversible technique for restructuring XML, naming an anonymous type, taking elements out of declaration and naming them with code names such as “_ct_anon01,” see e.g., Page 4, 2.2 Names of types, lines 5-31, Page 8: 3.1 Dump format based on existing transfer syntax – page 9, line 27*)

Seyrat et al. in view of ISO teaches normalizing a structured document. Sperberg-McQueen teaches a non-destructive way to restructure an XML document in order to transform anonymous types into named types. The advantages and disadvantages of using an anonymous versus a named type are well known in the art of structured documents. For instance while anonymous types can be more readable, named types have many advantages such as ability to reuse, reduced possibility of error, and taking up less space if reused more than once. A smaller schema is easier to transmit and faster to encode and decode. Thus, it would have been obvious to one of ordinary skill in the art to apply the transformation technique as taught by Sperberg-McQueen, to improve the encoding, decoding and transition steps of method taught by Seyrat et al. in view of ISO, for the predictable result of achieving a schema that is sometimes easier to encode, decode and transmit.

16. **Claims 17, 18, 22 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Seyrat et al. in view of ISO as applied to claims 15 and 20 above, and further in view of Girardot et al., "Millau: an encoding format for efficient representation and exchange of XML over the Web" (Herein after " Girardot et al.").

Regarding **claims 17, 18, 22 and 23**, Seyrat et al. in view of ISO teaches all the claimed limitations as put forth in the rejections of claims 15 and 20 above, except it does not expressly disclose:

In place of at least one of type names, element names and names of substitution groups, only numbers and at least one table containing an allocation between numbers and the respective at least one of type names, element names and names of substitution groups are encoded. (Claim 17)

At least one list comprising at least one of types names, element names, and names of substitution groups, as well as positions of the respective type names, element names and names of substitution groups in the list, are encoded in place of the respective type names, element names and names of substitution groups. (Claim 18)

At least one of type names, element names and names of substitution groups are decoded via numbers and at least one table containing an allocation between numbers and the respective at least one of type names, element names and names of substitution groups. (Claim 22)

At least one of type names, element names and names of substitution groups are decoded via at least one list comprising the respective at least one of type names, element names and names of substitution groups and positions of the respective at

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least one of type names, element names and names of substitution groups in the list.

(Claim 23)

However, Giradot et al. teaches:

In place of at least one of type names, element names and names of substitution groups (*encoding types, attributes, and other structures see e.g., page 750 left-hand side, paragraph 1*), only numbers and at least one table containing an allocation between numbers and the respective at least one of type names (*use of tokens that are numbers see e.g., page 750 left-hand side, paragraph 1, table 1*), element names and names of substitution groups are encoded. (*page 750 left-hand side, paragraph 1 – page 751 right-hand side paragraph 2, tables 1 and 2*)

At least one list comprising at least one of types names, element names, and names of substitution groups, as well as positions of the respective type names, element names and names of substitution groups in the list, are encoded in place of the respective type names, element names and names of substitution groups. (*page 750 left-hand side, paragraph 1 – page 751 right-hand side paragraph 2, tables 1 and 2, where "table" is read on "list"*)

At least one of type names, element names and names of substitution groups are decoded (see page 747: 1. Introduction) via numbers and at least one table containing an allocation between numbers and the respective at least one of type names, element names and names of substitution groups. (*page 750 left-hand side, paragraph 1 – page 751 right-hand side paragraph 2, tables 1 and 2*)

At least one of type names, element names and names of substitution groups are decoded (see page 747: 1. Introduction) via at least one list comprising the respective at least one of type names, element names and names of substitution groups and positions of the respective at least one of type names, element names and names of substitution groups in the list. (*page 750 left-hand side, paragraph 1 – page 751 right-hand side paragraph 2, tables 1 and 2, where "table" is read on" list"*)

Seyrat et al. in view of ISO teaches normalizing a structured document and then transmitting it and decoding it. Girardot et al. teaches a way to compress an XML document in order to encode not only data but also types and attributes using only numbers and a look up table. The advantage of doing so is to compress XML document more efficiently than traditional data compression algorithms while retraining the structural information in the data they exchange. (See *Girardot et al.*, page 747 – 748: 1. Introduction). Thus, it would have been obvious to one of ordinary skill in the art to apply the compression technique as taught by Girardot et al., to improve the encoding, decoding and transition steps of method taught by Seyrat et al. in view of ISO, for the predictable result of achieving a more compressed schema that retains structural characteristics that is faster to transmit.

17. The prior art made of record and not relied upon is considered to be pertinent to applicant's disclosure:

Murashita, US Patent No.: US 6,330,574 B1, teaches compression and decompression of tags in markup documents using a table.

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Walmsley, "Definitive XML Schema," teaches design differences between named and anonymous types.

Conclusion

The examiner requests, in response to this Office action, support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

When responding to this office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections See 37 CFR 1.111(c).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aleksandr Kerzhner whose telephone number is (571)270-1760. The examiner can normally be reached on Mon-Fri 9:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chace can be reached on (571) 272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

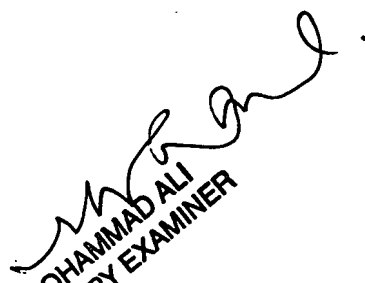
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A.K.

08/02/2007

/AK/


MOHAMMAD ALI
PRIMARY EXAMINER

